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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/821,660	04/09/2004	Alan L. Rockwood	3001.BYU.NP	8785
26986	7590	09/19/2005	EXAMINER	
MORRISS O'BRYANT COMPAGNI, P.C. 136 SOUTH MAIN STREET SUITE 700 SALT LAKE CITY, UT 84101			GURZO, PAUL M	
			ART UNIT	PAPER NUMBER
			2881	

DATE MAILED: 09/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No. 10/821,660	Applicant(s) ROCKWOOD ET AL.	
	Examiner Paul Gurzo	Art Unit 2881	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-66 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 17, 23-27, 29-35, 46 and 56-66 is/are rejected.
- 7) ☒ Claim(s) 7-16, 18-22, 28, 36-45 and 47-55 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 4/9/04 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>8/16/04, 3/7/05</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-6, 17, 23, 24, 27, 30-35, and 46 are rejected under 35 U.S.C. 102(e) as being anticipated by Guevremont et al. (6,653,627).

Regarding claims 1 and 30, 627 teaches a cross-flow ion mobility system and method for separating ions according to ion mobilities of charged particles and charged particles derived from atoms, molecules, particles, sub-atomic particles and ions, said system comprised of at least two electrodes (3 and 4) disposed so as to create an electric field therebetween, and a first fluid flow that is substantially in opposition to the electric field (col. 7, lines 3-21 and Fig. 2A and 3).

Regarding claims 2, 3, 23, 24, 31, and 32, 627 teaches the fluid flow being a gas or a liquid (col. 6, lines 28-35) and it is well known in FAIMS systems to use inert gases and all gases will modify the system in some manner.

Regarding claims 4-6 and 33-35, Fig. 2A and 3 depict the claimed permeable electrodes that are substantially parallel plates or cylinders and Fig. 3 clearly depicts the first and second cylinders.

Regarding claims 17 and 46, 627 teaches a voltage source (7) and claims that it is connected to at least one of the electrode, thereby anticipated a voltage connection to both of the electrodes (col. 7, lines 3-21).

Regarding claim 27, 627 teaches generating a high field asymmetric waveform (col. 7, line 3-21).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 25, 26, 29, and 56-66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Guevremont et al. (6,653,627) in view of Miller et al. (6,815,669).

Regarding claim 25, 627 teaches a means for analyzing but does not explicitly teach the ability to pass ions of a known mobility. However, 669 teaches a constant compensation field (44) to allow only selected ions to pass to the detector (32) (col. 8, lines 25-27 and Fig. 1). Further, because 669 teaches a mobility spectrometer, it is obvious that the selected ions are based on their mobilities. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to pass desired ions to increase the ion detection accuracy, leading to a more efficient device.

Regarding claim 26, 669 teaches identifying certain ions and generate peaks (Fig. 5) and those peaks are based on the voltage application which controls the velocity and well as the electric field (col. 9, 23-35, col. 16, lines 21-34).

Regarding claims 29, 56, and 57, 627 depicts, in Fig. 3, a the introduction of the ions into the cross-flow system and the detection (col. 9, lines 32-50). Further, both 627 and 669 use ion mobility spectrometers, therefore they will obtain ion mobility measurements, and 669 teaches relating ion mobility to a chemical identity and performing chemical and physical analysis (col. 9, 23-35, col. 16, lines 21-34).

Regarding claims 58-59, 669 teaches di-ethylmenthyl amine and benzene (col. 9, 23-35, col. 16, lines 21-34) and mobility spectrometers are used for characterizing a wide range of other samples including proteins.

Regarding claims 60-66, the voltage application to the electrodes in the prior art will act to create the driving electric field and the ions are clearly not rejected by the field (Fig. 3 of 627), and, depending on the voltage application, the electric field will vary throughout the length of the electrodes. As the electric field varies, the gas cross-flow velocity will vary as well. Further, 669 depicts, in Fig. 4, electrodes with a plurality of discrete sections. In addition, non-parallel electrodes, like those in ion guides, are known in the art and optimum transmission, focusing and detection could be achieved using such. Therefore, since the prior art is concerned with such results and Applicant provides no motivation for having non-parallel electrodes, it is considered an obvious extension of the prior art.

Allowable Subject Matter

Claims 7-16, 18-22, 28, 36-45, and 47-55 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The closest prior art of record does not teach or render obvious the claimed first and second cylinders including a plurality of apertures

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therethrough to enable a gas cross-flow to pass from inside the first cylinder through the cross-flow region and out through the second cylinder.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Guevremont et al. (6,770,875)


Guevremont et al. (6,831,271)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul Gurzo whose telephone number is (571) 272-2472. The examiner can normally be reached on M-Fri. 7:30 - 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Lee can be reached at (571) 272-2477. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

PMG


JOHN R. LEE
SUPERVISORY PATENT EXAMINER
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